

AMENDMENTS TO THE DRAWINGS

The attached two sheets of drawings include changes to Figs. 1 and 5. In particular, Figs. 1 and 5 have been amended to include descriptive text labels for the boxes.

Attachments: 2 replacement sheets

REMARKS

Claims 17 to 34 are pending. Claims 20 has been amended. In view of the following, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants note with appreciation the acknowledgment of the claim for foreign priority and the indication that all certified copies of the priority documents have been received.

Applicants thank the Examiner for considering the previously filed Information Disclosure Statement, PTO-1449 paper and cited references.

Applicants also note with appreciation the indication of allowable subject matter contained in claims 20 and 21. In this regard, the Examiner will note that claim 20 has been rewritten herein in independent form to include all of the limitations of its respective base claim. Claim 21 depends from claim 20. It is therefore respectfully submitted that claims 20 and 21 are in condition for immediate allowance.

The drawings were objected to because Figs. 1 and 5 allegedly need suitable descriptive legends. In this regard, Figs. 1 and 5 have been amended to include descriptive text labels. No new matter has been added. Entry and approval of amended Figs. 1 and 5 are respectfully requested. Furthermore, withdrawal of the objection to the drawings is respectfully requested.

Claims 17, 19, 22 to 26 and 28 to 34 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,227,062 (“Doman”).

To reject a claim as obvious under 35 U.S.C. § 103(a), the prior art must disclose or suggest each claim feature, and the prior art must also provide a motivation or suggestion for combining the features in the manner contemplated by the claim. (See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990)).

Claim 17 relates to a method for monitoring at least two electromagnetic valves of an internal combustion engine, in which an actual current sent to each of the at least two valves is independent of other ones of the at least two valves and in which a setpoint current for each of the at least two valves is preselected, the method including determining a total actual current that is supplied to the at least two valves, adding the setpoint currents to form a total setpoint current, comparing the total setpoint current to the total actual current

and providing a comparison result, and monitoring at least one of an interconnection of the at least two valves and the at least two valves based on the comparison result.

It is respectfully submitted that Doman does not disclose, or even suggest, these features of claim 17, and moreover, Doman teaches a fundamentally different approach to verify the operability of a particular set of different electrical consumers shown in Fig. 2. In particular, Doman starts from the consideration that with each additionally connected consumer, the voltage observable at the voltage source drops by a certain amount. (See col. 1, lines 55 and forward). When the components operate correctly, a certain reference voltage is expected. If the measured voltage exceeds the reference voltage, then an electrical defect is presumed. To observe voltage drops when consumers are added, a finite internal resistance of the voltage source must necessarily be presupposed, but in the case the voltage source has an internal resistance approaching zero, the voltage remains constant and the voltage drop described by Doman cannot be observed. Now, if the resistance in a consumer increases, due to a poor connection, for example, the resistance of the other parallel-connected consumers will increase and the voltage drop will be smaller than expected. Furthermore, due to the parallel connection of the consumers, the current flow in each consumer is coupled together so that with every addition of a consumer without a change of a resistance of a parallel connected consumer, the voltage drop at the voltage source changes, and therefore the current flow through each the consumers also changes.

By contrast, the method of claim 17 provides that each valve is supplied with an actual current independently of the other valves, and a setpoint current is specified for each valve. Such an independent current supply is not possible in Doman for reasons discussed above. To this extent, Doman merely describes a verification procedure, which only applies to the parallel connection of the electrical consumers of Fig. 2. Accordingly, any suggestion as to how to apply a voltage measurement in a current-controlled triggering of valves cannot be gathered from Doman. Nor can the adding and comparing of setpoint currents be gathered from Doman. For example, according to claimed subject matter of the present invention, the current to each valve is controlled individually and independently with the aid of a particular setpoint current, which is specified, for example, by operating parameters and stands in connection to a faultless functioning of the valve. A malfunction of the valve becomes detectable only if the actual current significantly deviates from the desired setpoint current. In Doman, by contrast, the expected voltage drop in the end is determined by the naturally existing resistance of the valve such that in the event of a faultless operation and a known voltage, a corresponding voltage drop occurs. In column 3, lines 28 to 30, Doman states that

under these circumstances a voltage drop of 0.1 to 0.2 volt is to be expected. Hence, the voltage drop described in Doman is merely a quantity that sets in naturally due to the electrical properties of the circuit, whereas the setpoint current of claim 17, by contrast, is a quantity that is preselected through specification by a control unit.

It is, therefore, respectfully submitted that claim 17 is allowable over Doman for at least these reasons. Claims 19, 22 and 23, which depend from claim 17, and claims 24 to 26 and 32 to 34, which recite features analogous to the features of claim 17, as well as claims 28 to 31, which depend from claim 26 that recites features analogous to claim 17, are allowable for at least the same reasons as those stated in connection with claim 17.

In further regards to the obviousness rejection, it is respectfully submitted that the Office Action's assertions with respect to modifying the Doman reference is mere hindsight reasoning, and that the Office Action fails to demonstrate a requisite motivation to modify the applied reference. That is, despite the asserted well-known relationship between current and voltage of Ohm's law there is no motivation or suggestion in Doman that measuring, determining, and adding currents and/or setpoint currents would be beneficial in any respect. In this regard, to the extent that the Examiner maintains the unsupported "ordinary skill" level with respect to the rejection, it is respectfully requested pursuant to 37 C.F.R. § 1.104(d)(2) that the Examiner provide an affidavit and/or that the Examiner provide published information concerning these assertions. This is because the § 103(a) rejections are apparently being based on assertions that draw on facts within the personal knowledge of the Examiner, since no documentary support was provided for these otherwise conclusory assertions. (See also M.P.E.P. § 2144.03). Otherwise, if the Examiner cannot provide either references or an affidavit to support the contentions made in the Office Action, it is respectfully requested that the rejections of the claims under 35 U.S.C. § 103(a) be withdrawn.

Claims 18 and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Doman in view of a court decision cited in M.P.E.P. § 2144.07. Applicants note that the court decision cited by the Examiner (*In re Harza*) does not appear in the latest version of M.P.E.P. § 2144.07. In any case, claims 18 and 27 depend from claims 17 and 26, respectively, and the Examiner's asserted rationale for rejecting claims 18 and 27 clearly does not remedy the deficiencies of the Doman reference as applied against parent claims 17 and 26. For at least these reasons, the obviousness rejection of claims 18 and 27 should be withdrawn.

In view of all of the foregoing, withdrawal of the rejections under 35 U.S.C. § 103(a) is therefore respectfully requested.

CONCLUSION

In view of the foregoing, it is respectfully submitted that all of the presently pending claims are allowable. It is therefore respectfully requested that the rejections be withdrawn since they have been obviated. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is respectfully requested.

Respectfully submitted,

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 (R. No. 36,197)

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